

ABSTRACT

1 A method and apparatus for producing purified or ozone enriched air to remove
2 contaminants from fluids is accomplished by exposing an air stream from a surrounding area
3 to ozone generating ultra-violet (UV) radiation to generate ozone in a system ozone chamber.
4 The ozone chamber is configured to reduce through-flow velocity and provide time for the
5 ozone to mix with the air and oxidize contaminants. The air stream subsequently enters a
6 germicidal chamber and is exposed to germicidal UV radiation to destroy bacteria and ozone
7 in the air stream resulting in sterilized air. The radiation source may include an end-cap that
8 interfaces guiding mechanisms to align the end-cap for power connections, and/or controls
9 emission of ozone generating radiation to control production of ozone. Further, the system
10 may include an additional germicidal chamber that exposes an air stream to germicidal
11 radiation prior to treatment within the ozone chamber. Moreover, the system may be
12 configured to include a baffling arrangement to control air through-flow velocity, or may be
13 implemented by a cartridge arrangement, whereby a cartridge housing the chambers and
14 radiation sources is periodically replaced. The system may further be configured for
15 installation within a wall or ceiling, or may be utilized to remove contaminants from and/or
16 ozonate liquids. In addition, the air sterilization systems may be utilized within air treatment
17 systems to remove contaminants from an air stream within these systems.